AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-25 (canceled).

26. (currently amended) A transmitter apparatus for performing transmission using transmission signals generated on the basis of data symbols of a specified transmission method, said transmitter apparatus, comprising:

an FFT processing part configured to generate frequency domain data from the data symbols;

an interleaver ~~for generating~~ configured to generate interleave-processed data ~~being obtained~~ by performing specified rearrangement processes on the frequency domain data ~~to which said data symbols are~~ converted by said FFT processing part, said interleaver having an interleaver memory for storing the frequency domain data generated by said FFT processing part; and

an IFFT processing part ~~for converting~~ configured to convert said interleave-processed data to time domain signals,

wherein[[;]] said interleaver generates and outputs N ~~pieces of~~ data points to the IFFT processing part from Q ~~(N >~~ ~~Q)~~ data points ~~symbols~~ inputted to the interleaver from the FFT processing part, N being greater than Q,

wherein the interleaver comprises an interleaver memory having Q rows and N/Q columns,

wherein the interleaver is configured to write Q data points received from said FFT processing part into a column of the interleaver memory, the data points of any column being associated with only one user, and

wherein the interleaver is configured to read Q × N/Q data points ordered by row from the interleaver memory to the IFFT processing part.

27. (canceled)

28. (currently amended) The transmitter apparatus according to claim 26, wherein said FFT processing part performs Q-point FFT processes on Q data ~~symbols~~ points inputted.

29. (currently amended) The transmitter apparatus according to claim 26, wherein said IFFT processing part performs N-point IFFT processes on N ~~pieces of~~ data points outputted from said interleaver.

30. (currently amended) The transmitter apparatus according to claim 26, wherein[[;]]

~~said interleaver is provided with an interleaver memory for storing output data of said FFT processing part,~~

~~data of~~ Q data points outputted from said FFT processing part are written into specified positions in said interleaver memory, and

~~specified~~ the N ~~pieces of~~ data points, including the Q ~~pieces of~~ data points written into said specified positions and other data points written into ~~other~~ positions other than the specified positions ~~into which~~ of said Q ~~pieces of~~ data points ~~are written~~ are read from said interleaver and outputted to said IFFT processing part.

31. (currently amended) The transmitter apparatus according to claim 26, wherein ~~specified~~ said N ~~pieces of~~ data points are read from said interleaver memory ~~are~~ and outputted to said IFFT processing part.

32. (currently amended) The transmitter apparatus according to claim 26, wherein the data symbols of said specified transmission method are spread signals ~~(including the case of spreading rate of 1)~~.

33. (currently amended) The transmitter apparatus according to claim 26, wherein the data symbols of said specified transmission method are multi-carrier signals.

34. (currently amended) The transmitter apparatus according to claim 26, wherein the data symbols of said specified transmission method are OFDM signals.

35. (currently amended) The transmitter apparatus according to claim 26, wherein the data symbols of said specified transmission method are data symbols of variable data rate.

36. (currently amended) A communication system comprising:

a transmitter apparatus for performing transmission using transmission signals generated on the basis of data symbols of a specified transmission method, said transmitter apparatus comprising a first FFT processing part for converting said data symbols to said frequency domain data, an interleaver for generating interleave-processed data being obtained by performing specified rearrangement processes on said frequency domain data converted by said first FFT processing part, and an IFFT processing part for converting said interleave-processed data to time domain signals, said interleaver comprising an interleaver memory having Q rows and N/Q columns, and said interleaver configured to generate and output N data points from Q data points inputted from said first FFT processing part, N being greater than Q; and

a receiver apparatus for restoring said data symbols on the basis of the received reception signals obtained by receiving said transmission signals, <u>said receiver apparatus comprising a second FFT processing part for converting said received time domain signals to received frequency domain data, a de-interleaver for generating de-interleave-processed data by performing specified rearrangement processes on said received frequency domain data, said de-interleaver configured to generate and output Q data points from N data points inputted to the de-interleaver, N being greater than Q</u> ~~wherein;~~

~~said transmitter apparatus comprises~~

~~an interleaver for generating interleave-processed data being obtained by performing specified rearrangement processes on frequency domain data to which said data symbols are converted,~~

~~an IFFT processing part for converting said interleave-processed data to time domain signals,~~

~~said interleaver generates and outputs N pieces of data from Q (N > Q) data symbols inputted; and~~

~~said receiver apparatus comprises~~

~~an FFT processing part for converting time domain signals to frequency domain data and~~

~~a de-interleaver for generating de-interleave-processed data being obtained by performing specified rearrangement processes on said converted frequency domain data, wherein;~~

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said de-interleaver generates and outputs Q pieces of
data from N (N > Q) pieces of data inputted.

37. (currently amended) The communication system
according to claim 36, wherein, said transmitter apparatus
further comprises an FFT processing part for converting said data
symbols to said frequency domain data, and said receiver
apparatus further comprises an a second IFFT processing part for
converting said de-interleave-processed data to time domain
signals.

38. (currently amended) The communication system
according to claim 36, wherein said second FFT processing part of
said receiver apparatus performs N-point FFT processes on N
pieces of reception data which have been received and converted
from serial to parallel.

39. (currently amended) The communication system
according to claim 36 37, wherein said second IFFT processing
part of said receiver apparatus performs Q-point IFFT processes
on Q pieces of rearrangement-processed data outputted from said
de-interleaver.

40. (currently amended) The communication system
according to claim 36, wherein[[;]]

said de-interleaver is provided with a de-interleaver memory for storing output data of the FFT processing part of said receiver apparatus,

data of N points outputted from the ~~second~~ FFT processing part of said receiver apparatus are written into specified positions in said de-interleaver memory, and

Q ~~pieces of~~ data points written into specified positions as data to be processed out of N ~~pieces of~~ data points written into said specified positions are read from said de-interleaver.

41. (currently amended) The communication system according to claim ~~36~~ 37, wherein specified Q pieces of data read from said de-interleaver memory are outputted to said second IFFT processing part of said receiver apparatus.

42. (currently amended) The communication system according to claim 36, wherein the data symbols of said specified transmission method are spread signals ~~(including the case of spreading rate of 1)~~.

43. (currently amended) The communication system according to claim 36, wherein the data symbols of said specified transmission method are multi-carrier signals.

44. (currently amended) The communication system according to claim 36, wherein the data symbols of said specified transmission method are OFDM signals.

45. (currently amended) A communication method being a transmission method for performing transmission using transmission signals generated on the basis of data symbols of a specified transmission method, said communication method comprising:

an FFT processing step for converting said data symbols to frequency domain data[[,]]$\underline{;}$

an interleave-processing step of performing rearrangement processes on said converted frequency domain data[[,]]$\underline{;}$ and

an IFFT processing step of converting said frequency domain data to time domain signals[[,]]$\underline{;}$

wherein[[;]]$\underline{,}$

said interleave-processing step generates and outputs N ~~pieces of~~ data $\underline{points}$ from Q ~~(N > Q)~~ data $\underline{points}$ ~~symbols~~ inputted$\underline{,\ N\ being\ greater\ than\ Q,}$

$\underline{said\ interleave\text{-}processing\ step\ includes\ the\ sub\text{-}step}$ $\underline{of\ writing\ Q\ data\ points\ into\ a\ column\ of\ interleaver\ memory,\ the}$ $\underline{data\ points\ of\ any\ column\ being\ associated\ with\ only\ one\ user,}$ $\underline{and,}$

said interleave-processing step further includes the sub-step of reading Q × N/Q data points ordered by row from the interleaver memory to the IFFT processing part.

46. (currently amended) A communication method, comprising:

a transmission step of performing transmission using transmission signals generated on the basis of data symbols of a specified transmission method; and

a reception step of receiving transmission signals transmitted by said transmission step and restoring said data symbols,

wherein said transmission step comprises the sub-steps of:

an FFT processing step of converting said data symbols to frequency domain data[[,]];

an interleave-processing step of performing interleave processes on said converted frequency domain data, said interleave-processing step generating and outputting N data points from Q data points inputted, N being greater than Q, said interleave-processing step including the sub-steps of i) writing Q data points into a column of interleaver memory, the data points of any column being associated with only one user, and ii)

<u>reading Q × N/Q data points ordered by row from the interleaver</u>

<u>memory;</u> and

an IFFT processing step of converting said frequency

domain data to time domain signals, and

<u>wherein</u> said reception step comprises <u>the sub-steps of:</u>

an FFT processing step of converting said time domain

signals to frequency domain data[[,]]<u>;</u>

de-interleave-processing   step   of   performing

rearrangement processes on said converted frequency domain data<u>,</u>

<u>said de-interleave-processing step generating and outputting Q</u>

<u>data points from N data points inputted, N being greater than Q;</u>

and

an IFFT processing step of converting said frequency

domain data to time domain signals~~, wherein;~~

~~said interleave processing step generates and outputs N~~

~~pieces of data from Q (N > Q) data symbols inputted and~~

~~said de-interleave processing step generates and~~

~~outputs Q pieces of data from N (Q < N) pieces of data inputted~~.